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Fragmentation of intact forest landscapes (IFLs) in the Democratic Republic of Congo (DRC) - agents of change.

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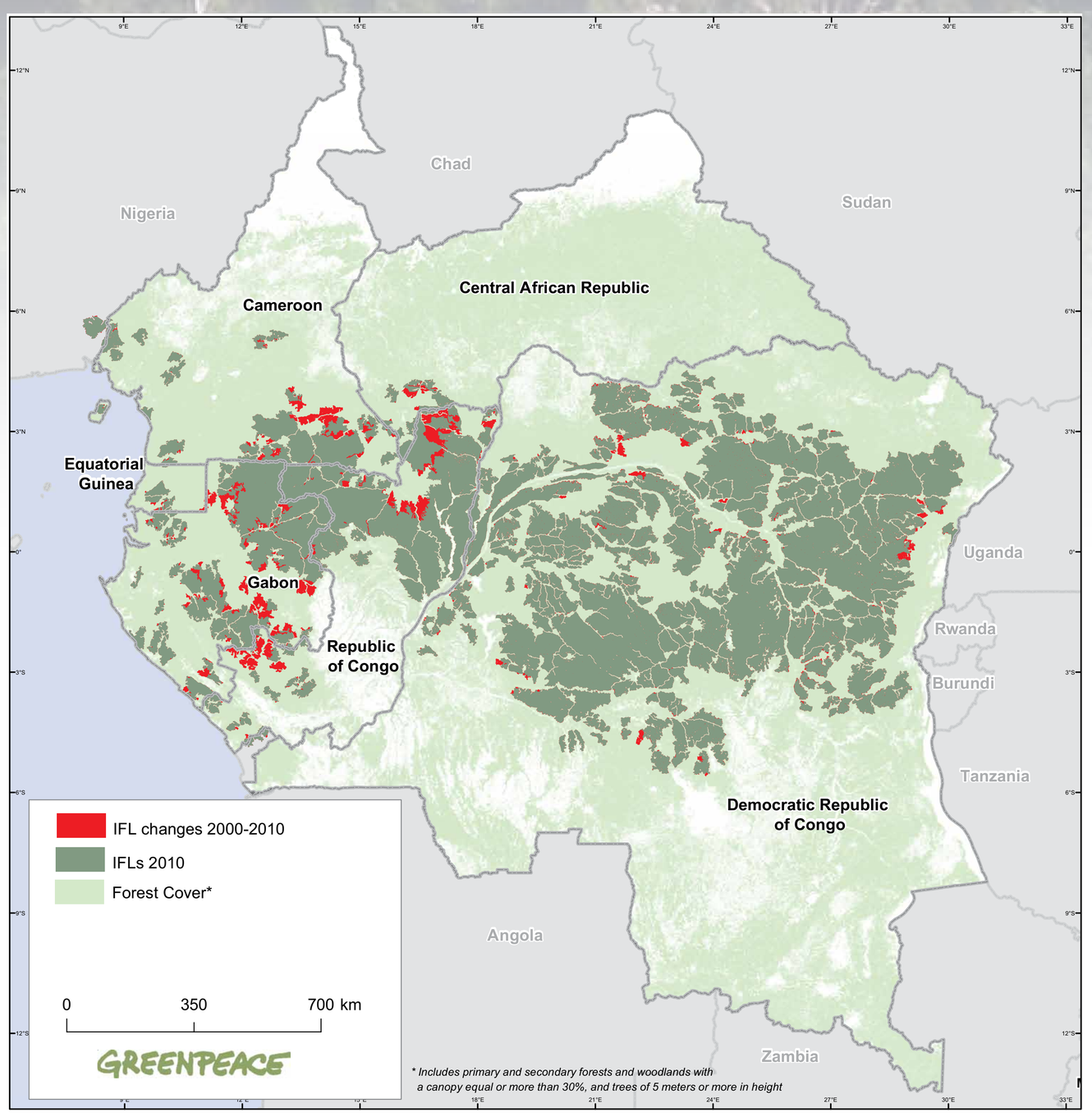

Figure 1: MAP OF IFL LOSSES IN THE CONGO BASIN 2000-2010

Introduction

The first globally consistent map of intact forest landscapes (IFLs) of the world was produced for the year 2000 [1,2]. IFL maps have been produced for subsequent years (2000-2005 and 2005-2010) for tropical areas such as the Democratic Republic of Congo (DRC). This allows estimation of IFL loss rates and subsequent identification of areas with high IFL loss or vulnerability to IFL loss.

Methodology

Detailed methodology is published elsewhere [2] but essentially, for the DRC, high spatial resolution (60 m) satellite imagery, mostly Landsat-TM/ETM with non-cloud mosaics from South Dakota State University, was analysed to identify IFLs (defined as areas greater than 500 km^2 with minimal human impact). Mapping IFLs used a 'negative' approach where deforested areas and fragmented patches were excluded, with a 1 km exclusion zone around infrastructure. The remaining forests were considered as IFLs and also category two High Conservation Value Forests [3].

Results

The DRC has the second largest tropical IFL area in the world after Brazil [4; Fig. 1]. The DRC contains more than 63 Mha of IFLs, which is 41% of the DRC's total forest cover and 70% of the total IFL area in the Congo Basin (90 Mha) in 2010. The relative loss of IFLs in the DRC in the last decade has been moderate (<2%).

A significant cause of IFL loss is fragmentation as a consequence of logging activities, such as roads and workers' camps/settlements. Therefore, planned expansion of industrial logging in the DRC is likely to increase the rate of IFL losses in this country. Half of the total area awarded to logging companies in the DRC (i.e. 15 Mha) is located in IFLs [4; Fig. 2]. Consequently, as much as 12% of the country's IFLs could be lost as a direct result of subsequent logging activities, even if the current moratorium on logging titles were to be maintained over the next three decades.

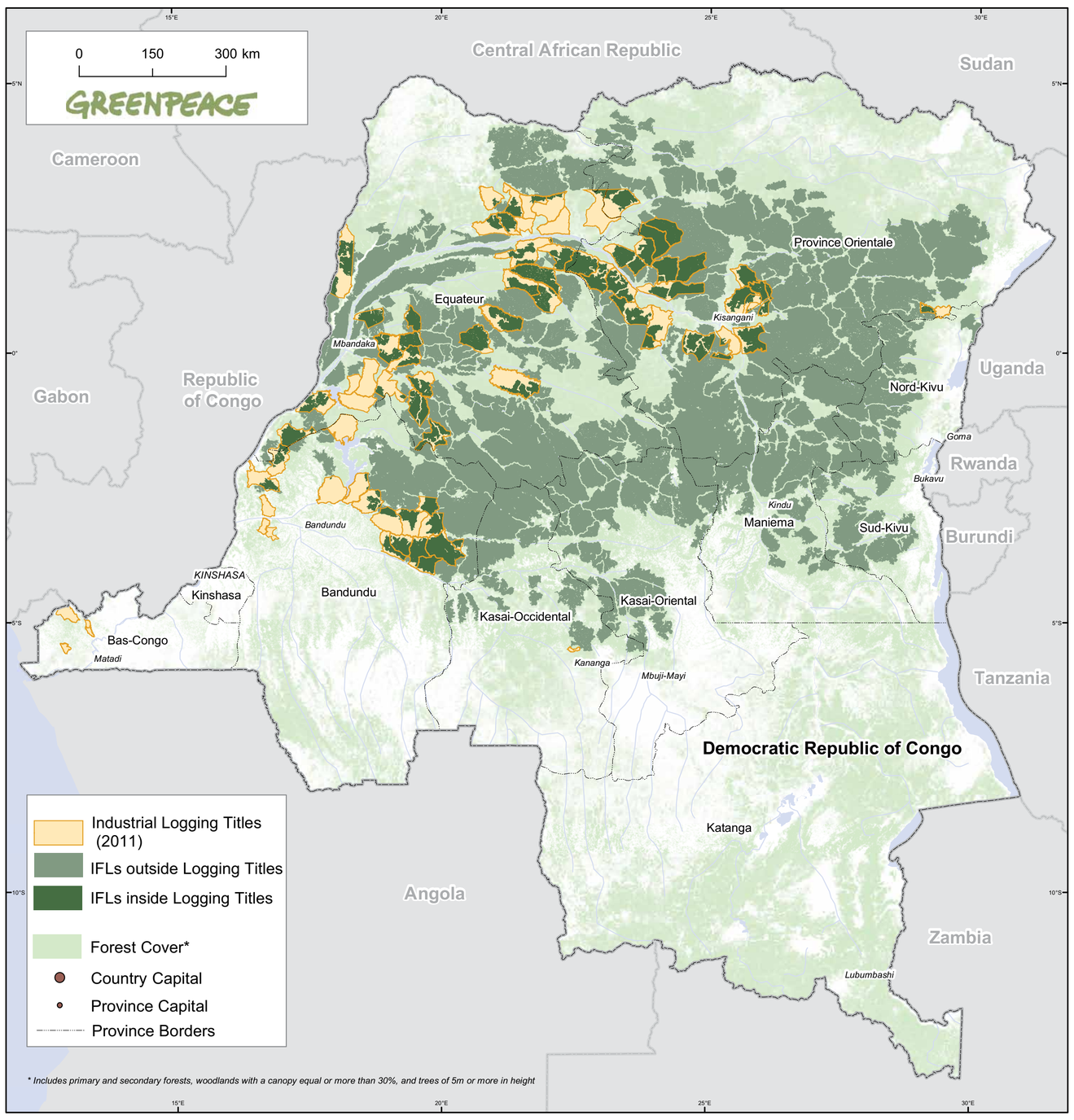

Figure 2: OVERLAY OF IFLS WITH LOGGING TITLES. OVER 10% OF THE DRC'S IFLS ARE THREATENED BY LOGGING CONCESSIONS

Conclusion

The area of IFLs in the DRC has been relatively stable until now. However, a substantial proportion (over 10%) of the IFLs are now under threat from logging concessions, leading to calls for their protection. Ideally, protected IFLs would be zoned, via a participatory planning process with local communities (see ref 4), incorporating areas for low impact uses such as hunting that are compatible with maintaining biodiversity. However, high impact activities, such as intensive logging or mining, would be directed outside of IFLs.

IFLs, along with other high conservation value forests, are a priority for protection, e.g. under REDD. The maps presented here could aid that protection by defining IFL area.

Greenpeace's report on IFLs in the Congo (see Reference 4)

References

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